



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,598	01/03/2006	Juha Lipponen	FORSAL-108	1519
36528	7590	06/04/2008	EXAMINER	
STIENNON & STIENNON			HUG, ERIC J	
612 W. MAIN ST., SUITE 201				
P.O. BOX 1667			ART UNIT	PAPER NUMBER
MADISON, WI 53701-1667			1791	
			MAIL DATE	DELIVERY MODE
			06/04/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/559,598	<b>Applicant(s)</b> LIPPONEN ET AL.
	<b>Examiner</b> Eric Hug	<b>Art Unit</b> 1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 02 December 2005.

2a) This action is FINAL.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 35-75 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) 71-75 is/are allowed.

6) Claim(s) 35-70 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 02 December 2005 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date 12/02/2005

4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 35-45, 48, 50-63, 67, and 70 are rejected under 35 U.S.C. 102(b) as being anticipated by Wallsten (US 4,102,299).

Wallsten discloses applying a coating onto a moving web. A coating is first applied to one side of the web, and then an adjustable vacuum is applied to the same side of the web in order to smooth the coating and to regulate its thickness. Figure 1 shows a coating being applied under pressure to a paper web 4 via dispensing slot 6. A second slot 10 in connection with a vacuum is arranged downstream of the coating slot 6. See Figures 1 and 2. Various configurations of coating slots and vacuum slots are shown in Figures 3-9. Figure 10 shows further application of a vacuum on the opposite side of the web to assist in application of the coating. See column 9, lines 5-37. Figures 12-19 show various arrangements for two-sided coating.

Thus, regarding claim 35, Wallsten anticipates the claimed method by applying a coating with an applicator device to a first surface of the web and applying a pressure effect (a vacuum) to the same first surface of the web or to both sides of the web. It is deemed that the method is suitable for a surface size containing starch (re: claim 36), which is effectively a low viscosity coating (column 1, lines 26-32). Regarding claim 37 it is deemed that the vacuum accomplishes the claimed effect. Regarding claim 38, Wallsten discloses further applying a vacuum to the second side of the web (Figure 10). Regarding claims 39, 40, and 43, Wallsten discloses successive stages of application and vacuum (Figures 12-19). Regarding claims 41, 42, 44, application is performed and stopped before vacuum, and vacuum is applied only after coating is applied. Regarding claim 45, the pressure effect is a vacuum. Regarding claim 48, a vacuum can be applied to the second side (Figure 10). Regarding claim 50, performing multiple applications as in Figures 12-19 using two-sided vacuum as in Figure 10 is within the scope of Wallsten. Regarding claim 51, the pressure effect is controllable. Regarding claims 52 and 53, by way of example, a vacuum of 150 -1100 mm water is disclosed (column 11, lines 35-40), equivalently about 1.47 to 10.8 kPa, thus overlaps the claimed ranges. Regarding claim 54, it is deemed that the two-sidedness of the web is controlled by controlling both vacuums. Regarding claim 55, drying between successive applications and afterwards is disclosed in column 10, lines 1-12.

Also, regarding claim 56, Wallsten anticipates the claimed apparatus of an applicator device for a surface size and an applicator device for applying a pressure effect. Regarding claim 57, the pressure effect is a vacuum. Regarding claim 58, a vacuum can be applied to the second surface of the web (Figure 10). Regarding claim 59, successive stages of application and vacuum are disclosed (Figures 12-19). Regarding claim 60, vacuum is begun only after coating

application. Regarding claim 61, the coating is deemed to encompass starch, however, the coating material does not structurally limit the claimed apparatus. Regarding claim 62, the close proximity of the coating applicator and the vacuum applicator as shown in Figure 1, for example, can be characterized as claimed. Regarding claim 63, the vacuum is controllable. Regarding claim 67, the vacuum applicator can be described as a vacuum shoe. Regarding claim 70, the coating slot is effectively a film application device.

Claims 35, 37-40, 50, 51, 56-59, 62-66, and 68 are rejected under 35 U.S.C. 102(b) as being anticipated by Mendez-Gallon (US 2002/0124796).

Mendez-Gallon (hereby MG, for short) discloses an applicator for applying a liquid or pasty medium of a moving paper web. Figure 1 shows a curtain applicator unit applying a curtain medium 3 to one side of web 1, and a vacuum roll on the opposite side of the web. Figure 2 shows a suction box 5 instead of a vacuum roll. Suction sucks air through the web, drawing the liquid or pasty medium to and into the web (paragraph [0030]).

Thus, regarding claim 35, MG anticipates the claimed method by applying a coating with an applicator device to a first surface of the web and applying a pressure effect (a vacuum) to the opposite side of the web. It is deemed a surface size is encompassed by the liquid or pasty medium. Regarding claim 37, it is deemed that the vacuum accomplishes the claimed effect. Regarding claim 38, MG discloses applying the vacuum to the second side of the web (Figures 1 and 2). Regarding claims 39, 40, and 50, MG discloses that multiple coatings with or without intermediate drying may be provided (paragraph [0033]), thus successive stages of application

and vacuum may be provided. Regarding claim 51, the vacuum source is controllable (paragraph [0028]).

Also, regarding claim 56, MG anticipates the claimed apparatus of an applicator device for a surface size and an applicator device for applying a pressure effect. Regarding claim 57, the pressure effect is a vacuum. Regarding claim 58, a vacuum is applied to the second surface of the web. Regarding claim 59, successive stages of application and vacuum are disclosed (paragraph [0033]). Regarding claim 62, the close proximity of the coating applicator and the vacuum applicator as shown in Figures 1 and 2 can be characterized as claimed. Regarding claim 63, the vacuum is controllable. Regarding claims 64 and 65, the vacuum applicator can be a suction roll with a designated area of suction. Regarding claim 66, the vacuum applicator can be a suction box (Figure 2). Regarding claim 68, the curtain applicator is a contact-free device.

Claims 35 and 45-47 are rejected under 35 U.S.C. 102(e) as being anticipated by Metzger et al (US 7,175,710).

Metzger discloses coating a moving paper web with a curtain of coating material as the web travels over a deflection roll. A suction box is provided upstream of the deflection roll to strip a boundary layer of air from the web prior to coating. The suction is provided on the same side of the web as where the coating is applied. Thus, regarding the claims, Metzger anticipates the claimed method by applying a coating with an applicator device to a first surface of the web and applying a pressure effect (a vacuum) to the same side of the web before application of the coating. The coating is applied immediately after the vacuum is stopped.

Claims 35-38, 50-53, 56-58, 60-63, and 66-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Cleveland et al (US 5,486,381).

Cleveland discloses non-compressive means for applying a liquid to a permeable web. Liquid materials include those normally used in a size press (column 1, lines 9-18). Web materials include paper (column 2, line 30). In Figure 1, a curtain of liquid 22 is applied to an advancing web 12, and onto a first surface 12A. A vacuum 26 is applied to the second surface 12B of the web. The vacuum is applied simultaneously with the curtain of liquid. See column 7, line 66 to column 8, line 11 and column 8, line 66 to column 9, line 27.

Thus, regarding claim 35, Cleveland anticipates the claimed method by applying liquid material such as a surface size with an applicator device to a first surface of the web and applying a pressure effect (a vacuum) to the web for drawing the liquid into the web. Regarding claim 36, starch is encompassed by the materials given in column 10, lines 12-19. Regarding claim 37, it is deemed that the vacuum accomplishes the claimed effect. Regarding claim 38, Cleveland discloses applying the vacuum to the second side of the web (Figure 1). Regarding claim 50, multiple vacuum elements may be arranged in series (column 9, lines 5-6). Regarding claims 51-53, the vacuum is controllable. The vacuum pressure can be, for example, 60 to 370 inches of water (column 4, lines 28-44), which is equivalently about 15 to 67 kPa, thus overlaps the claimed ranges.

Also, regarding claim 56, Cleveland anticipates the claimed apparatus of an applicator device for a surface size and an applicator device for applying a pressure effect. Regarding claim 57, the pressure effect is a vacuum. Regarding claim 58, a vacuum is applied to the second surface of the web. Regarding claim 60, vacuum is begun only after coating application.

Regarding claim 61, the coating is deemed to encompass starch, however, the coating material does not structurally limit the claimed apparatus. Regarding claim 62, the close proximity of the coating applicator and the vacuum applicator as shown in Figure 1, for example, can be characterized as claimed. Regarding claim 63, the vacuum is controllable. Regarding claims 66 and 67, the vacuum means can be a suction box or vacuum shoe (column 9, lines 6-8). Regarding claim 68, the liquid applicator is a curtain applicator, which is a contact-free applicator.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mendez-Gallon (US 2002/0124796) in view of Rantenen (CA 2376255). Rantenen was cited by Applicant in the Information Disclosure Statement of December 2, 2005.

Mendez-Gallon is applied to claim 68 above, wherein the liquid application device is a contact-free device. Specifically, a curtain coater is disclosed rather than a spray coater. However, a spray coater is a known conventional means of applying a coating to a web in a contact-free manner, and is also a known alternative to a curtain coater, as disclosed by Rantenen. It would have been obvious to one skilled in the art to utilize a spray coater as a simpler means for providing an even coating of desired thickness.

***Allowable Subject Matter***

Claims 71-75 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

The claims are allowable for providing a turning roll for the web, a first vacuum nozzle arranged after the turning roll to remove air from the web, and a surface size applicator after the vacuum nozzle to apply size to the web.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Hug whose telephone number is (571) 272-1192.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Eric Hug/  
Primary Examiner, Art Unit 1791